

NOTES ON PACIFIC MARINE ALGAE¹

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For the past ten years I have been engaged in taxonomic and phytogeographic studies of the marine algae of the Pacific coast of North America. Although it is planned to present the results ultimately as a floristic treatise, the completion of this project is so far from sight as to suggest the usefulness of publishing certain nomenclatural, taxonomic, and distributional notes at this time. All specimens cited in this paper are in the Herbarium of the University of California, Berkeley. Collections are mine unless otherwise indicated.

Rosvingiella nom. nov. *Gayella* Rosenvinge (1893, p. 936). Non *Gayella* Pierre (1890, p. 26). Lectotype: *G. polyrhiza* Rosenvinge.

Although unanimity of opinion regarding the validity of this genus of Prasiolaceae is lacking, many phycologists prefer to regard the terete members of this family as constituting a genus separate from *Prasiola*. Unfortunately, the name *Gayella* had been used previously (in the Sapotaceae) by Pierre. Therefore I have proposed the substitute name, *Rosvingiella*. Two species have been reported from the Pacific coast of North America.

Rosvingiella polyrhiza (Rosenvinge) comb. nov. *Gayella polyrhiza* Rosenvinge (1893, p. 937, figs. 45, 46).

Rosvingiella constricta (Setchell et Gardner) comb. nov. *Gayella constricta* Setchell et Gardner in Gardner (1917, p. 384, pl. 33, figs. 5-9; pl. 32, fig. 5).

Rosvingiella constricta and *Prasiola meridionalis* Setchell et Gardner (1920) occupy a unique ecological niche: they are restricted to rocks (usually offshore) covered with guano and pounded by heavy surf, upon which they form patches or distinct bands in the spray zone. *Rosvingiella constricta* inhabits only the lower part of this association, where it may grow intermixed with *Prasiola meridionalis* or in nearly a pure stand. The green patches or bands may be seen from a considerable distance, but only occasionally is one able to get close enough to discern the two component growths, which differ slightly in color. Still more rarely is one able to collect from these rocks, so that the range of these associated species as indicated by documented records probably is smaller than the actual range. Heretofore these two species have not been recorded south of Carmel Bay. Although I have observed probable stands along the central California coast south of Carmel and on the Channel Islands, only once did circumstances permit collections to be made (Forneys Cove, Santa Cruz Island, 12 March 1950).

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Ectocarpus dimorphus nom. nov. *Ectocarpus variabilis* (Saunders) G. M. Smith (1942, p. 647, figs. 1-4).

This distinctive species is commonly found growing on various Laminariales. Since *E. variabilis* G. M. Smith is a later homonym of *E. variabilis* Vickers (1905, p. 59) from Barbados, and since no other epithet is available, I have proposed a name which refers to the two kinds of plurilocular organs found in this species.

DICTYOPTERIS JOHNSTONEI Gardner (1940, p. 270, pl. 35). This species, which was published posthumously, is based on a "single, apparently fragmentary, part of a plant" dredged from 25 fathoms at Lone Cove, Santa Cruz Island, California (*G. R. Johnstone 96*, 28 November 1928, UC 472507). It is supposedly distinguished from *D. zonarioides* Farlow (1899) by the narrow segments and inconspicuous midrib. Hollenberg (1948) reported this species from "a large tide pool at medium high tide level on exposed rocky shore several miles south of Redondo Beach." Hollenberg's plant differs from the type, however, in being larger, coarser, and with well-developed percurrent axes. Material agreeing with the type was dredged by an Allan Hancock Foundation Expedition (Station 1431-41, 26 September 1941) off White Cove, Santa Catalina Island (Dawson, 1949, p. 21). Abundant material of *Dictyopteris* was dredged from 40 meters at the same locality by the M/V *Orca* of the J. W. Sefton Foundation Expeditions (4231, 8 February 1949), providing a series of specimens that strongly suggests the conspecificity of *D. johnstonei* and *D. zonarioides*. Although many specimens are typical *D. zonarioides*, others show a diversity of segment size, having some branches typical of *D. zonarioides*, other branches typical of *D. johnstonei*, and still other branches intermediate. Entire plants of the narrow *D. johnstonei* form were collected on the north shore of the west island, Islas San Benito, Baja California, Mexico (6409, 4 February 1950). The significance of this form remains to be demonstrated.

Laminaria setchellii nom. nov. *Hafgygia andersonii* Areschoug (1883, p. 3). *Laminaria andersonii* (Areschoug) Farlow ex Anderson (1891, p. 220). Non *L. andersonii* Eaton ex Hervey (1881, p. 98).

The name *Laminaria andersonii* has been applied to two species, and unfortunately the earlier application was to the species currently called *L. sinclairii* rather than to the plant which has been assumed to be *L. andersonii*. Doty (1947, p. 40) remarked that from Hervey's description of the blade "one would be inclined to think that he was referring to *L. Sinclairii*." However, from Hervey's statements that the plant grew on rocks with *Pterygophora* and that it had "the usual branching hold-fast" Doty concluded that *L. andersonii* as usually interpreted was definitely indicated. Hervey described a specimen (which unfortunately I have not been able to locate) sent by Dr. C. L. Anderson from Santa Cruz, California, with a stipe one-sixth of an inch thick and about eighteen inches long bearing a blade about an inch wide and eighteen inches long. This descrip-

tion clearly refers to *L. sinclairii*. Indeed, on the label of specimen no. 118 of Farlow, Anderson and Eaton's *Algae Exsiccatae Americae Borealis*, "*Laminaria Andersonii* Eaton mscr in Rep't. U.S. Fish Comm. 1875," is listed as a synonym of *L. sinclairii*. Further clarification is provided by Farlow (1881): "Since it was ascertained that the species called *L. Andersonii* was the same as *Lessonia Sinclairii* the manuscript name of *L. Andersonii* has been applied by Prof. Eaton and myself to a second species from the California coast which belongs to the digitate division of the genus and not to the section *Saccharinae*." Hervey apparently was not aware that the plant to which the manuscript name *L. andersonii* was originally applied has been recognized as *L. sinclairii*, and he thus unwittingly created a nomenclatural problem by effecting valid publication.

The epithet *andersonii* in its revised application was not validated until 1883, when Areschoug published it under *Hafgygia*. It was transferred to *Laminaria* by Anderson (1891), but the resulting combination is a later homonym and hence illegitimate. Inasmuch as no legitimate epithets are available for this species, I have proposed a new name in honor of W. A. Setchell, one of the foremost contributors to our knowledge of the Laminariales.

Heretofore the known range of this species has been Whidbey Island, Washington, to Carmel Highlands, Monterey County, California (Smith, 1944, p. 137). There are no herbarium specimens to authenticate the statement of Setchell and Gardner (1925, p. 605) that this species occurs as far north as Sitka, Alaska. The following collections extend the range northwest to Vancouver Island, British Columbia, and south to Santa Barbara County, California, and to certain of the Channel Islands.

CANADA. BRITISH COLUMBIA. Vancouver Island: Point No Point, 16 miles west of Sooke, 7056. UNITED STATES. CALIFORNIA. Monterey County: mouth of Malpaso Creek, 3622; Kasler Point, 814; Point Sur, 1101; Partington Point, 2256; Lucia, 2844. San Luis Obispo County: Point Piedras Blancas, 1359; Cayucos, 2317. Santa Barbara County: Point Sal, 5136; Point Pedernales, 2402; Point Arguello, 2541; Point Conception, 2468. San Miguel Island: Cuyler Harbor, 3743. Santa Rosa Island: Sandy Point, 4128. Santa Cruz Island: Fraser Point, 6050. San Nicolas Island: first rocky outcropping west of sand spit, 4541.

Laminaria setchellii is abundant in all surf-swept areas throughout the range on the mainland, forming extensive stands at lowest lower low water level (LLLW). On the Channel Islands it is an excellent indicator of localized cold water.

LAMINARIA SINCLAIRII (Harvey ex Hooker f. et Harvey) Farlow, Anderson et Eaton (1878, no. 118). *Lessonia sinclairii* Harvey ex Hooker f. et Harvey in Hooker (1846, p. 460). *Hafgygia sinclairii* (Harvey ex Hooker f. et Harvey) Areschoug (1883, p. 6). *Laminaria andersonii* Eaton ex Farlow (1876, p. 715, *nomen nudum*). *Laminaria andersonii* Eaton ex Hervey (1881, p. 98). The original description of *Laminaria sinclairii* (as *Lessonia sinclairii*) is meager, but sufficient to validate the name. Failure to accept this description as valid publication would cause *L. ander-*

sonii Eaton ex Hervey to be the correct name for this species, thereby intensifying the nomenclatural confusion between *L. sinclairii* and *L. setchellii*.

Heretofore the known range of *Laminaria sinclairii* has been from Vancouver Island, British Columbia, to San Luis Obispo County, California. The following collections extend this range into Santa Barbara County, California: Point Sal, 5135; Point Pedernales, 2403; Point Conception, 2423; Government Point, 5451, 5519, 5577; Gaviota, 5275. This species apparently is absent on the Channel Islands.

DICTYONEUROPSIS RETICULATA (Saunders) G. M. Smith (1942, p. 651, figs. 9–13). Two new localities can be recorded for this strikingly beautiful kelp, previously known only from sublittoral Monterey Bay. Three juvenile plants were collected by an abalone survey team of the California Department of Fish and Game from the Fort Ross cove area of Sonoma County at a depth of 3 to 12 meters, 20 September 1951. Extensive sublittoral stands were discovered off the Channel Islands by the Sefton Foundation Expeditions. One collection was dredged from 31 meters between Fraser Point and Kinton Point, Santa Cruz Island (5884) and another stand was found at a depth of 24 meters $1\frac{1}{4}$ miles southwest of Ford Point, Santa Rosa Island (5981), both in March, 1950. At Pacific Grove an occasional plant grows in the littoral zone at lowest lower low water level (3044). The blade of the largest plant dredged off Ford Point measured 19 by 107 cm., and this was clearly an incomplete specimen.

It is surprising how steadfastly Setchell refused to recognize the distinctness of this taxon, considering that he himself pointed out the differences between it and *Dictyoneurum* and even illustrated an unmistakable specimen (1896, p. 46, pl. 1).

EGREGIA J. E. Areschoug. Of the nine genera of Laminariales restricted to the west coast of North America, *Egregia* alone exhibits much variation. Heretofore, with collecting largely confined to the mainland of California north of Carmel and south of Santa Barbara, there have appeared to be two well-defined species: *E. menziesii* (Turner) Areschoug (1876), extending from Vancouver Island, British Columbia, to Point Conception in Santa Barbara County, California; and *E. laevigata* Setchell (1896), ranging from Point Conception to Baja California, Mexico, with isolated occurrences in Carmel, Monterey County, and Port Harford (Port San Luis), San Luis Obispo County. A study of a long series of specimens from the Channel Islands and the mainland between Carmel and Santa Barbara reveals a more complex picture: in these areas the two species overlap and intergrade, suggesting hybridization.

Typical *Egregia menziesii* has a tough rachis closely beset with simple, entire or dentate, spatulate blades. Short blunt tubercles cover all or most of the rachis (the lowermost portion may be smooth) and frequently also cover the bladders and blades. Typical *E. laevigata* has a smooth brittle rachis, somewhat broader than that of *E. menziesii*, bearing relatively

large, elliptical to ligulate, simple and entire or frequently highly dissected blades. The foliar extension of the bladder, which in *E. menziesii* is stubby, is well developed and ultimately dissected. In the form with the blades dissected into filiform segments, this kelp is known as the "Feather Boa."

Despite the conspicuous differences between typical representatives of the two taxa, when a careful study is made of all available material as to the presence or absence of tubercles and the size, shape, degree of dissection and distribution of blades, the two species are seen to be far less sharply delimited than was previously believed.

Typical *Egregia menziesii* constitutes a remarkably uniform series of populations from Vancouver Island, British Columbia, to Government Point (just south of Point Conception), Santa Barbara County, California. At both ends of the range, however, deviation occurs. On Vancouver Island there is a population with highly dissected blades (Tofino, Clayoquot Sound, *Setchell & Parks*, 23 June 1930; Point No Point, 16 miles west of Sooke, 7053, 17 June 1955). In the vicinity of Point Conception (from Point Pedernales to Government Point) there are plants (2447), putatively hybrid, that show certain characteristics of *E. laevigata* of that area, namely, a smooth rachis (except at the tips of branches) and a wider spacing of blades. No plants referable to *E. menziesii* occur on the mainland south of Government Point, but in the northern Channel Islands plants of *Egregia* consistently exhibit characteristics of the two species combined with intermediate features apparently at random. In the majority of specimens the rachis is tough (not brittle as in *E. laevigata*) and covered in part with tubercles that are longer and more slender than those of typical *E. menziesii*. The blades are variable in size and shape, but in older fronds they become highly dissected, as in *E. laevigata*. Although this series of populations seems to be of hybrid origin and is morphologically heterogeneous, its geographical distinctness supports its recognition as a subspecies. Assignment to one or the other species, however, seems to me to necessitate an arbitrary decision. Thus I arbitrarily refer the Channel Islands subspecies to *E. menziesii*.

EGREGIA MENZIESII (Turner) Areschoug subsp. **insularis** subsp. nov. Axis lentus haud fragilis plerumque partim attamen tuberculis gracilibus obtectus paginae frondium maturiorum profunde dissectae.

Rachis tough, not brittle, usually covered at least in part with slender tubercles; blades of older fronds highly dissected.

Type. North shore, West Anacapa Island, Ventura County, Channel Islands, California, 14 March 1950, 6130 (UC 981571).

Additional records. CALIFORNIA. Channel Islands: San Miguel Island: Cuyler Harbor, 3744. Santa Rosa Island: Sandy Point, 4124; mouth of Garañon Cañon, 4104; Bechers Bay, 3235; East Point, 3972. Santa Cruz Island: Fraser Point, *Hubbs* 47-81; Willows Anchorage, 3809, 6047; Smugglers Cove, 6207; Prisoners Harbor, 4140, 5823; Frys Harbor, 3352; Twin Harbors, 3331. Anacapa Islands: *F. H. Elmore*. Santa Barbara Island: landing, 4415; southeast reef, 4354. San Nicolas Island: first rocky outcropping west of sand spit, 4441.

EGREGIA LAEVIGATA Setchell subsp. **borealis** (Setchell) stat. nov. *Egregia laevigata* forma *borealis* Setchell (Phyc. Bor. Amer. no. XL, 1901).

Typical *Egregia laevigata* occurs from Goleta, California, to Punta San Eugenio, Baja California, Mexico. Plants clearly referable to *E. laevigata*, yet differing slightly but consistently, are to be found in California from Gaviota, Santa Barbara County, northward to Santa Cruz, Santa Cruz County. The rachis is brittle and usually smooth, although at times the terminal blade, or the young rachis, or both, may bear short blunt tubercles. The blades are similar to those of *E. laevigata*, elliptical to ligulate, but are usually more widely spaced and never dissected. This series of populations as represented at Carmel was described by Setchell as *E. laevigata* f. *borealis*. However, its morphological uniformity and geographical distinctness would seem to warrant its recognition as a subspecies.

In an herbarium annotation, Setchell designated as the type of *Egregia laevigata* a specimen collected by him (1659) at Carmel Bay, Monterey County, California, 17 May 1897 (UC 96743). Inasmuch as this specimen was collected subsequent to the publication of *E. laevigata*, its selection as lectotype is untenable. In the original publication Setchell mentioned plants from Santa Cruz, Port Harford, and San Pedro, all California localities, but only those from San Pedro, Los Angeles County (*Setchell 1157*, December 1895) have dissected blades, a character emphasized by Setchell. Therefore, it seems reasonable to propose *Setchell 1157* as the lectotype collection, and, of several specimens available, UC 96758 as lectotype specimen.

Representative specimens examined. CALIFORNIA. Santa Cruz County: Santa Cruz, C. L. Anderson. Monterey County: Monterey, *Setchell 1412 & 3080*; Pebble Beach, 1051, 1659, 1799, 3053. San Luis Obispo County: Piedras Blancas, 1376, 5019; Cambria, H. L. Mason; Cayucos, 2313; Port Harford, *Setchell 1135*; Oilport, *Reed 57*; Pismo Beach, 5293. Santa Barbara County: Point Arguello, 2517; Government Point, 5454, 5520, 5575; Gaviota, 5229.

A case might well be argued for recognizing in *Egregia* only one species comprised of several subspecies. It seems of greater taxonomic usefulness, however, to continue the recognition of two species.

Bossiella nom. nov. *Bossea* Manza (1937a, p. 46).

This genus of Corallinaceae unfortunately bears a name that is a later homonym of *Bossea* in the Geraniaceae, which was proposed by Reichenbach (1841, p. 201) as a substitute name for *Cynosbata* (DC.) Rchb. and commemorates J. F. W. Bosse. The following species seem worthy of recognition.

Bossiella californica (Decaisne) comb. nov. *Amphiroa californica* Decaisne (1842, p. 124). As interpreted by Manza (1937b) and Smith (1944), this species is known only from the Monterey Peninsula, California. Yendo (1902b) reported it (as *Cheilosporum californicum*) from Vancouver Island, British Columbia, but the photograph of this collection indicates that most likely Yendo had a sparsely branched specimen of

B. corymbifera. The type must be restudied to eliminate the persistent uncertainty as to the identity of this taxon.

Bossiella cooperi (Dawson et Silva) comb. nov. *Bossea cooperi* Dawson et Silva in Dawson (1953, p. 158).

Bossiella corymbifera (Manza) comb. nov. *Bossea corymbifera* Manza (1937b, p. 562). Heretofore this species has been reported only from the Monterey Peninsula, California (Manza; Smith), and Coos County, Oregon (Doty). The following records amplify the known range.

CANADA. BRITISH COLUMBIA. Vancouver Island: Point No Point, 16 miles west of Sooke, 7047; Victoria, 1875, *R. Middleton*. UNITED STATES. WASHINGTON. Whidbey Island, *Gardner 918*. CALIFORNIA. Mendocino County: Mendocino, *Brown 754a*. Sonoma County: 3 miles north of Fort Ross, *L. Miles*; Horseshoe Cove, near Bodega Bay, *L. Miles*. Marin County: Tomales Head, *W. Hartman*.

Bossiella dichotoma (Manza) comb. nov. *Bossea dichotoma* Manza (1937b, p. 562). This species, previously reported only as far north as Moss Beach, San Mateo County, California, has been found at Shelter Cove, Humboldt County (7000).

Bossiella gardneri (Manza) comb. nov. *Bossea gardneri* Manza (1937b, p. 563).

Bossiella insularis (Dawson et Silva) comb. nov. *Bossea insularis* Dawson et Silva in Dawson (1953, p. 159).

Bossiella interrupta (Manza) comb. nov. *Bossea interrupta* Manza (1937b, p. 563).

Bossiella ligulata (Dawson) comb. nov. *Bossea ligulata* Dawson (1953, p. 156).

Bossiella orbigniana (Decaisne) comb. nov. *Amphiroa orbigniana* Decaisne (1842, p. 124).

Bossiella pachyclada (Taylor) comb. nov. *Bossea pachyclada* Taylor (1945, p. 194).

Bossiella plumosa (Manza) comb. nov. *Bossea plumosa* Manza (1937a, p. 46). Heretofore this species has been reported only from San Mateo County (Manza) and the Monterey Peninsula (Smith) in California and from southern Oregon (Doty). The following records amplify the known range.

CANADA. BRITISH COLUMBIA. Vancouver Island: Point No Point, 16 miles west of Sooke, 7048. UNITED STATES. WASHINGTON. Jefferson County: Ruby Beach, 7104. OREGON. Lincoln County: Yachats, 7135. CALIFORNIA. Del Norte County: Crescent City, 6902. Humboldt County: Trinidad, 6827. Mendocino County: mouth of Jughandle Creek, 6720. Sonoma County: Shell Beach, 4 miles south of Jenner, 6671; 2 miles north of Bodega Bay, 3496. Marin County: Bolinas, *Gardner 1026*. San Francisco County: Lands End, *Setchell 5747*. Santa Cruz County: Santa Cruz, 3551. Monterey County: mouth of Malpaso Creek, 3632; Kasler Point, 820, 849; Partington Point, 2288; Lucia, 2817. San Luis Obispo County: Cayucos, 2312. Santa Barbara County: Point Pedernales, 2419; Government Point, 5541.

Bossiella sagittata (Dawson et Silva) comb. nov. *Bossea sagittata* Dawson et Silva in Dawson (1953, p. 157).

PACHYARTHRON CRETACEUM (Postels et Ruprecht) Manza (1937a, p. 45). This North Pacific species extends southward to Vancouver Island, judging from Yendo's photograph (1902b, pl. 51, fig. 1) of a plant collected at Port Renfrew (as *Amphiroa cretacea* f. *tasmanica*).

CALLIARTHRON REGENERANS Manza (1937b, p. 565). The following records outline the known range of this species, which heretofore has been reported only from San Mateo County in California (Manza) and Coos and Curry counties in Oregon (Doty).

CANADA. BRITISH COLUMBIA. Vancouver Island: Point No Point, 16 miles west of Sooke, 7045. UNITED STATES. WASHINGTON. Whidbey Island, Gardner 83. CALIFORNIA. Del Norte County: Crescent City, 6904. Humboldt County: Shelter Cove, 7002. Mendocino County: mouth of Jughandle Creek, 6717. Sonoma County: Shell Beach, 4 miles south of Jenner, 6670; 2 miles north of Bodega Bay, 3495. Marin County: Bolinas, Gardner 1027. Monterey County: Partington Point, 2278; Lucia, 2837. San Luis Obispo County: Piedras Blancas, 5040; Pismo Beach, 5367. Santa Barbara County: Government Point, 2195, 5467, 5511. San Miguel Island: Cuyler Harbor, 3756. Santa Rosa Island: Sandy Point, 4123; Cañada Lobos, 2763; East Point, 4071. Santa Cruz Island: Fraser Point, 5967; Willows Anchorage, 3823, 6039; Smugglers Cove, 6221. Santa Barbara Island: landing, 4405; southeast reef, 4365. MEXICO. BAJA CALIFORNIA. Islas Todos Santos: south island, 4829.

CALLIARTHRON SCHMITTII Manza (1937b, p. 566). This rare species, heretofore known only from the San Diego region, has been found on littoral rocks at Eagle Point, San Juan Island, Washington (*Papenfuss & Scagel*, 7 July 1952). The fronds are prostrate, as inferred correctly by Manza from fragmentary dredged material.

Serraticardia (Yendo) stat. nov. *Cheilosporum* sect. *Serraticardia* Yendo (1905, p. 2). *Cheilosporum* subgen. *Serraticardia* Yendo (1902c, p. 193, *nomen nudum*). Type species: **Serraticardia maxima** (Yendo) comb. nov. *Cheilosporum maximum* Yendo (1902a, p. 22, pl. 2, figs. 18, 19; pl. 6, fig. 9).

Serraticardia macmillanii (Yendo) comb. nov. *Cheilosporum macmillanii* Yendo (1902b, p. 718, pl. 52, figs. 4, 5; pl. 56, figs. 11–14). *Calliarthron pinnulatum* Manza (1937b, p. 565).

This plant, heretofore known only from the original collection made by Yendo in the summer of 1901 at the Minnesota Seaside Station (Port Renfrew), Vancouver Island, has been discovered growing on surf-swept rocks of the lower littoral at two localities in California, namely, three miles north of Fort Ross, Sonoma County (*L. Miles*, 19 July 1951) and Pescadero Point, Monterey Peninsula (3090, 10 July 1948). The regular distichous opposite branching is suggestive of *Corallina*, but the conceptacles are borne laterally on the faces of intergenicula. On axial intergenicula the conceptacles are usually paired, one toward each lateral margin. Pinnae, being of approximately the same width as conceptacles, usually bear only one. According to Yendo, conceptacles may also occur terminally on pinnae, but my material does not show terminal concept-

acles nor are Yendo's figures convincing. Conceptacles borne subterminally on the face of a pinna might easily be misinterpreted as terminal.

The most closely related species appears to be *Cheilosporum maximum* Yendo, from Japan, and both species were placed by Yendo in his section *Serraticardia* (Yendo, 1905, p. 26). Although Manza apparently was not familiar with *Cheilosporum macmillanii*, he (1937b, p. 567) referred *C. maximum* to *Joculator* Manza (1937a, p. 47), a genus based on the character that conceptacles may be both lateral and terminal in the same plant. (*Cheilosporum* as circumscribed by Manza is characterized as having conceptacles only on the upper margins of intergenicula.) *Joculator* was merged into *Corallina* by Dawson (1953, p. 124) on the consideration that lateral conceptacles sometimes occur in *Corallina officinalis* L. *Joculator pinnatifolius* Manza, the type of its genus, has a predominance of terminal conceptacles, and in this character as well as in general habit it seems more closely related to *Corallina* than to either *Cheilosporum macmillanii* or *C. maximum*. In the two latter species lateral conceptacles are the rule rather than the exception, and in habit they seem intermediate between a *Corallina* with compressed intergenicula (e.g., *C. chilensis* DeCaisne) and a pinnate *Bossiella* (e.g., *B. plumosa*). In fact, it appears that we are dealing with a group of species which tend to bridge the gap between *Corallina* and *Bossiella*, two genera previously thought to be widely separated. No anatomical differences between these two genera have been demonstrated.

The occurrence of species intermediate between two genera need not affect the taxonomic usefulness and validity of recognizing both genera. In the present case *Cheilosporum macmillanii* and *C. maximum* seem sufficiently similar to one another and sufficiently different from both *Corallina* and *Bossiella* to warrant the recognition of a third genus.

The intergenicula of *Serraticardia* differ from those of *Bossiella* in not being expanded to the point of differentiating wings from the midrib. On the other hand, they are expanded more than those of *Corallina*, resulting in a more closely knit pattern of branching.

The type of *Calliarthron pinnulatum* Manza is a robust but poorly branched specimen of *Serraticardia macmillanii* from Moss Beach, San Mateo County, California (Manza, 2 January 1935). It is surprising that Manza referred this specimen to *Calliarthron*, a genus characterized by a unique anatomy of interwoven filaments.

PLOCAMIUM OREGONUM Doty (1947, p. 177, pl. 14, fig. B). According to entries in his notebook, N. L. Gardner had prepared a manuscript for this species and had designated as the type a collection from Trinidad, Humboldt County, California (June 1934, Gardner 7837, UC 536732). The following records supplement those cited by Doty (from Curry, Coos, and Lincoln counties in Oregon and Marin and Humboldt counties in California).

CANADA. BRITISH COLUMBIA. Vancouver Island: Point No Point, 16 miles west of Sooke, 7036. UNITED STATES. CALIFORNIA. Mendocino County: mouth of

Jughandle Creek, 6706. Sonoma County: Shell Beach, 4 miles south of Jenner, 6659; 2 miles north of Bodega Bay, 3510.

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A NEW YUCCA FROM SONORA, MEXICO

HOWARD SCOTT GENTRY

Yucca grandiflora sp. nov. Arbor 3-4 m. alta; folia 70-100 cm. longa, 4-5 cm. medio lata, viridia, laevia, margine brunneo sparse-filifero, spina terminali valida basi sulcata, 2-2.5 cm. longa; inflorescentia paniculata, ramis lateralibus dense pubescentibus; perianthium subglobosum, segmentis subaequalibus, 7-9 cm. longis, ovatis, mucronatis, glabris; filamenta pubescentia, basi segmentorum adnata; ovarium elongatum, 4.5-6 cm. longum; stylus breviter 3-lobatus; fructum non vidi.

Arborescent, 3-4 m. tall, branching from the base and toward the crown, with deep leaf crowns; leaves 70-100 cm. long, 4-5 cm. wide at mid-blade, slightly narrowed above base, dark green, smooth, ascending to descending, persisting dry and deflected in age on the trunk, the margin narrow, brown, filiferate with long, fine, brittle threads, the terminal spine stout, brown, broadly grooved; inflorescence an irregular open panicle 70-100 cm. long; peduncle 10-30 cm. long, glabrate below; bracts and bractlets scarious, dull white, friable; lateral branches densely white-tomentose, flexuous, horizontal; flowers short-pedicellate to subsessile, glabrous, creamy white, divergent on horizontal, openly-spaced lateral branches (fig. 2); perianth 7-9 cm. long, the segments spreading, ovate, thin, bluntly mucronate, connate at base, the outer slightly smaller and thicker than the inner; filaments hyaline-pubescent throughout, the anthers oblong; pistil slender, 4.5-6 cm. long, deeply sutured, shortly beaked below the lobate stigma; fruits not seen.

Type. Above Tierra Negra, Cedros Range, east of Río Cedros, Sonora, Mexico, February 14, 1952, *Gentry 11601* (U. S. Nat. Herb. 2089433 and 2089434).

This plant differs from all other known species of *Yucca* in the large subsessile flowers borne on tomentose lateral branches in an open ragged-appearing panicle. Although the fruits are not available for study, the obvious relationship is with the group having fleshy fruits, the *Sarcocarpa*.